

DATE: October 16, 1990

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PNEA #: 43-870-1131-03,-05,-06-QDF02-03

END ITEM EFFECTIVITY:
X X X
OV102 OV103 OV104MODEL NO/NAME: 870-1131 (VAFB), OMS/RCS HYPERGOLIC QUICK
DISCONNECT/FILTER ASSEMBLY SET

SUBSYSTEM: OMS/RCS

PART NUMBER:	PART NAME:	REFERENCE DESIGNATION:	QTY.:
GW70-421131-008	Hypergolic Quick Disconnect/Filter Assembly (106 Couplings Total)	QDF02	1
GW70-421131-009	Hypergolic Quick Disconnect/Filter Assembly (69 Couplings Total)	QDF02	1
GW70-421131-010	Hypergolic Quick Disconnect /Filter Assembly (52 Couplings Total)	QDF02	1

CRITICALITY NUMBER: 2

FUNCTION: Provides interface QD connection between the orbiter OMS/FRCS Panel-Service Walls and hypergolic supply facility.

CRITICAL FAILURE MODE: Filter passes contamination.

CAUSE: Mechanical degradation.

FAILURE EFFECT ON:

- (A) END ITEM: Loss of cleanliness level, possible end item degradation.
- (B) INTERFACING SUBSYSTEM(S): Possible degradation of interfacing systems.
- (C) ORBITER: Potential for damage to the orbiter airborne half coupling (possible source of external leakage).
- (D) PERSONNEL: No effect as a filter rupture does not cause outside leakage.

HAZARDS: Introduction of contamination into the orbiter system.

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DESIGN: Ground half coupling filters are located in the coupling at the facility side interfaces. These filters are cone shaped- single mesh welded type and are easily removable for cleaning or replacement. The filter material is compatible with a fluid media of N2O4, MMH, GHe and GN2. The filter element contained in the airborne half coupling has a 200 micron maximum particle rating.

TEST: Per MC276-0018, the filter is tested to verify a 25 micron rating. The filter is proof pressure tested to 525 psi and differential pressure tested to 400 psi (maximum operating pressure 250 psi).

Per MC276-0018, the filter is bubble point tested annually.

INSPECTION: Per MC276-0018, the filter is examined to verify conformance to SCD in material, dimensions, construction and identification marking. The filter element weave pattern shall be in accordance with the manufacturers' drawing.

Per OMI V6G14, in-place preventive maintenance is performed quarterly on both the oxidizer and fuel quick-disconnect assemblies at the Pad 207 and 107 foot levels.

Pre-operation inspections of the filter assembly are performed when performing OMI's V1031, V1180 and/or V2323.

OPERATION: No operations apply for reduction of risk.

If an emergency shutdown is required, Appendix Z of the OMI in use is initiated (Reference OMI's V2323, V1031, V3567 and V1180).

DETECTION: Detection of flow increase. Fill time is shortened.

CORRECTIVE ACTION: Isolation and replacement.

FAILURE HISTORY: Per the FRACA database, no failure history was reported for this node.